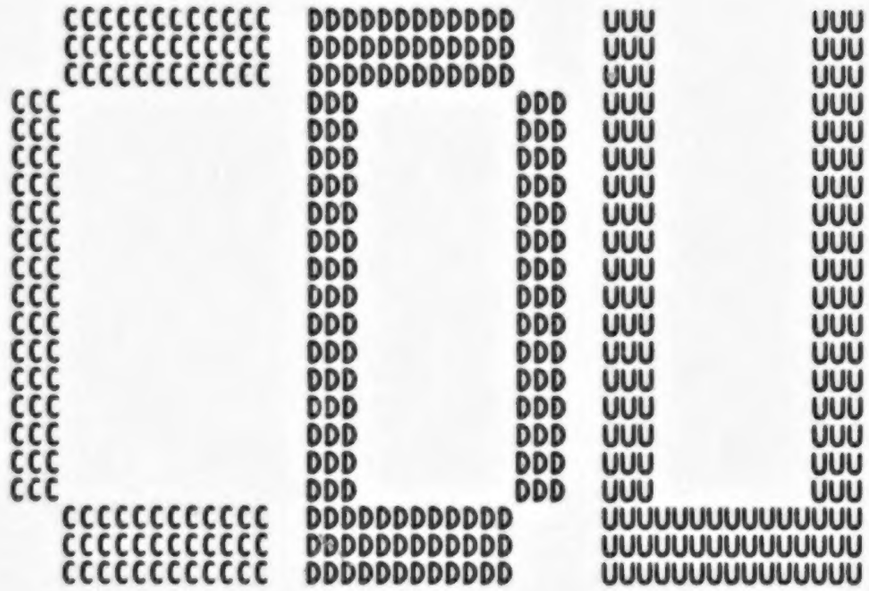
CCCCCCCCCCC DDDDDDDDDDD UUU UUU
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```
PPPPPPPP      AAAAAA    RRRRRRRR      SSSSSSSS  EEEEEEEEEE      11
PPPPPPPP      AAAAAA    RRRRRRRR      SSSSSSSS  EEEEEEEEEE      11
PP       PP  AA      AA  RR      RR  SS        EE            1111
PP       PP  AA      AA  RR      RR  SS        EE            1111
PP       PP  AA      AA  RR      RR  SS        EE              11
PP       PP  AA      AA  RR      RR  SS        EE              11
PPPPPPPP     AA      AA  RRRRRRRR      SSSSSS  EEEEEEEE        11
PPPPPPPP     AA      AA  RRRRRRRR        SSSSSS  EEEEEEEE      11
PP           AAAAAAAAAA  RR  RR                SS  EE          11
PP           AAAAAAAAAA  RR  RR                SS  EE          11
PP           AA      AA  RR    RR              SS  EE          11          ....
PP           AA      AA  RR    RR              SS  EE          11          ....
PP           AA      AA  RR      RR  SSSSSSSS    EEEEEEEEEE  111111      ....
PP           AA      AA  RR      RR  SSSSSSSS    EEEEEEEEEE  111111      ....

LL             IIIIII      SSSSSSSS
LL             IIIIII      SSSSSSSS
LL               II      SS
LL               II      SS
LL               II      SS
LL               II      SS
LL               II        SSSSSS
LL               II        SSSSSS
LL               II              SS
LL               II              SS
LL               II              SS
LL               II              SS
LLLLLLLLLL     IIIIII    SSSSSSSS
LLLLLLLLLL     IIIIII    SSSSSSSS
```

```
;     1          0001  0 MODULE parse1          (IDENT='V04-000',
;     2          0002  0                        ADDRESSING_MODE(EXTERNAL=GENERAL))
;     3          0003  1 = BEGIN
;     4          0004  1
;     5          0005  1 !*****************************************************************************
;     6          0006  1 !*                                                                           *
;     7          0007  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
;     8          0008  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                   *
;     9          0009  1 !*  ALL RIGHTS RESERVED.                                                     *
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;    12          0012  1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE  *
;    13          0013  1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
;    14          0014  1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
;    15          0015  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
;    16          0016  1 !*  TRANSFERRED.                                                             *
;    17          0017  1 !*                                                                           *
;    18          0018  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
;    19          0019  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
;    20          0020  1 !*  CORPORATION.                                                             *
;    21          0021  1 !*                                                                           *
;    22          0022  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
;    23          0023  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
;    24          0024  1 !*                                                                           *
;    25          0025  1 !*                                                                           *
;    26          0026  1 !*****************************************************************************
;    27          0027  1
;    28          0028  1 !++
;    29          0029  1 ! Facility:     Command Definition Utility, CLD Parser Module 1
;    30          0030  1 !
;    31          0031  1 ! Abstract:     This module is one of a few modules that implements the
;    32          0032  1 !               parser for CLD files.  This parser translates the CLD source
;    33          0033  1 !               language into an intermediate representation composed of
;    34          0034  1 !               nodes linked in a directed graph.
;    35          0035  1 !
;    36          0036  1 ! Environment:  Standard CDU environment.
;    37          0037  1 !
;    38          0038  1 ! Author:       Paul C. Anagnostopoulos
;    39          0039  1 ! Creation:     30 November 1982
;    40          0040  1 !
;    41          0041  1 ! Modifications:
;    42          0042  1 !
;    43          0043  1 !       V04-001 BLS0270         Benn Schreiber          9-FEB-1984
;    44          0044  1 !               Correct IMAGE statement when image name is not quoted.
;    45          0045  1 !
;    46          0046  1 !--
;    47          0047  1
;    48          0048  1
;    49          0049  1 library 'sys$library:lib';
;    50          0050  1 require 'clitabdef';
;    51          0375  1 require 'cdureq';
```

```
;    53          0789  1 !       T A B L E   O F   C O N T E N T S
;    54          0790  1 !       ---------   ---   -----------------
;    55          0791  1
;    56          0792  1 forward routine
;    57          0793  1         cdu$cld: novalue,
;    58          0794  1         cdu$statement,
;    59          0795  1         cdu$define_verb,
;    60          0796  1         cdu$define_syntax,
;    61          0797  1         cdu$define_type,
;    62          0798  1         cdu$v_s_clause;
;    63          0799  1
;    64          0800  1 !       E X T E R N A L   R E F E R E N C E S
;    65          0801  1 !       -----------------   -------------------
;    66          0802  1
;    67          0803  1 external routine
;    68          0804  1         cdu$bool_expr,
;    69          0805  1         cdu$check_for_children,
;    70          0806  1         cdu$cli_flag,
;    71          0807  1         cdu$create_node,
;    72          0808  1         cdu$get_next_token,
;    73          0809  1         cdu$lookup_child,
;    74          0810  1         cdu$param_clause,
;    75          0811  1         cdu$qual_clause,
;    76          0812  1         cdu$report_syntax_error,
;    77          0813  1         cdu$token_must_be,
;    78          0814  1         cdu$type_clause,
;    79          0815  1         cli$present;
;    80          0816  1
;    81          0817  1 external
;    82          0818  1         cdu$gl_token_class: long,
;    83          0819  1         cdu$gq_token: descriptor;
```

```
;    85          0820  1 !       G L O B A L   D A T A
;    86          0821  1 !       -----------   -------
;    87          0822  1
;    88          0823  1 ! The following items contains the address of the root node of the
;    89          0824  1 ! intermediate representation.  This node must be available to all other
;    90          0825  1 ! modules.
;    91          0826  1
;    92          0827  1 global
;    93          0828  1         cdu$gl_root_node: ref node;
```

```
;  95     0829  1 !       O V E R A L L   S T R U C T U R E
;  96     0830  1 !       -------------   -----------------
;  97     0831  1 !
;  98     0832  1 ! This is a recursive descent compiler.  That means that the source language,
;  99     0833  1 ! as contained in CLD files, is compiled by routines which recognize certain
; 100     0834  1 ! subsets of the language and call other such routine to recognize the rest
; 101     0835  1 ! of the language.  Routines may be invoked recursively when the syntax
; 102     0836  1 ! is recursive.
; 103     0837  1 !
; 104     0838  1 ! The language is assumed to be LL(1), which means it is parsed from left
; 105     0839  1 ! to right and each construct can be recognized by inspecting only its
; 106     0840  1 ! first token, with no backtracking.  It is not strictly LL(1), but the
; 107     0841  1 ! exceptions aren't too bad.
; 108     0842  1 !
; 109     0843  1 ! The complete syntax for CLD files is presented below.  Terminals are
; 110     0844  1 ! shown in upper case, while nonterminals are shown in lower case.  There
; 111     0845  1 ! is a parsing routine for each nonterminal.  This routine is responsible
; 112     0846  1 ! for pulling all tokens for its construct from the file, and creating
; 113     0847  1 ! one or more nodes which are the intermediate representation of the construct.
; 114     0848  1 !
; 115     0849  1 ! The lexical and syntactic portions of the CDU are based primarily on work
; 116     0850  1 ! done by A. Davie and R. Morrison, described in their book "Recursive Descent
; 117     0851  1 ! Compiling".
; 118     0852  1 !
; 119     0853  1 ! The intermediate representation of the file is composed of a set of nodes
; 120     0854  1 ! linked together as a directed graph.  Each node represents a single semantic
; 121     0855  1 ! entity, with any subordinate entities as its children.  Children are
; 122     0856  1 ! linked together in a sister chain, as opposed to having an array of
; 123     0857  1 ! child pointers in the node.  The right-hand side of the syntax description
; 124     0858  1 ! shows how the syntax is mapped into nodes.
```

```
;  126     0859  1 !      S Y N T A X   F O R   C L D   F I L E S
;  127     0860  1 !      -----------   -----   -----   ---------
;  128     0861  1
;  129     0862  1 ! NONTERMINAL          SYNTAX                                          INTERMEDIATE REPRESENTATION
;  130     0863  1 !
;  131     0864  1 ! cld ::=              {[,] statement}+                                node with children
;  132     0865  1 !
;  133     0866  1 ! statement ::=        IDENT h-string !                                node with string
;  134     0867  1 !                      MODULE symbol !                                 node with symbol
;  135     0868  1 !                      define-verb !
;  136     0869  1 !                      define-syntax !
;  137     0870  1 !                      define-type
;  138     0871  1 !
;  139     0872  1 ! define-verb ::=      DEFINE VERB symbol {[,] v-s-clause}*            node with symbol, children
;  140     0873  1 !
;  141     0874  1 ! define-syntax ::=    DEFINE SYNTAX symbol {[,] v-s-clause}*          node with symbol, children
;  142     0875  1 !
;  143     0876  1 ! define-type ::=      DEFINE TYPE symbol {[,] type-clause}*           node with symbol, children
;  144     0877  1 !
;  145     0878  1 ! v-s-clause ::=       CLIFLAGS ( cli-flag {, cli-flag}* ) !           node with children
;  146     0879  1 !                      CLIROUTINE symbol !                             node with symbol
;  147     0880  1 !                      DISALLOW bool-expr !                            node with child
;  148     0881  1 !                      NODISALLOWS !                                   node
;  149     0882  1 !                      IMAGE h-string !                                node with string
;  150     0883  1 !                      OUTPUTS ( symbol {,symbol}* ) !                 node with children
;  151     0884  1 !                      PARAMETER Pn {[,] param-clause}* !              node with symbol, children
;  152     0885  1 !                      NOPARAMETERS !                                  node
;  153     0886  1 !                      PREFIX symbol !                                 node with symbol
;  154     0887  1 !                      QUALIFIER symbol {[,] qual-clause}* !           node with symbol, children
;  155     0888  1 !                      NOQUALIFIERS !                                  node
;  156     0889  1 !                      ROUTINE symbol !                                node with symbol
;  157     0890  1 !                      SYNONYM symbol                                  node with symbol
;  158     0891  1 !
;  159     0892  1 ! param-clause ::=     PROMPT [=] {symbol ! string} !                  node with string
;  160     0893  1 !                      common_clause
;  161     0894  1 !
;  162     0895  1 ! qual-clause ::=      BATCH !                                         node
;  163     0896  1 !                      NEGATABLE !                                     node
;  164     0897  1 !                      NONNEGATABLE !                                  node
;  165     0898  1 !                      PLACEMENT [=] {GLOBAL ! LOCAL ! POSITIONAL} !   node with symbol
;  166     0899  1 !                      common_clause
;  167     0900  1 !
;  168     0901  1 ! type-clause ::=      KEYWORD symbol {[,] keyword-clause}* !          node with symbol, children
;  169     0902  1 !                      PREFIX symbol                                   node with symbol
;  170     0903  1 !
;  171     0904  1 ! keyword-clause ::=   NEGATABLE !                                     node
;  172     0905  1 !                      NONNEGATABLE !                                  node
;  173     0906  1 !                      common_clause
;  174     0907  1 !
;  175     0908  1 ! common-clause ::=    CLIFLAGS ( cli-flag {, cli-flag}* ) !           node with children
;  176     0909  1 !                      DEFAULT !                                       node
;  177     0910  1 !                      LABEL [=] symbol !                              node with symbol
;  178     0911  1 !                      SYNTAX [=] symbol !                             node with symbol
;  179     0912  1 !                      VALUE [( value_clause {, value_clause}* )]      node with children
;  180     0913  1 !
;  181     0914  1 ! value-clause ::=     CONCATENATE !                                   node
;  182     0915  1 !                      NOCONCATENATE                                   node
```

```
1 !                              DEFAULT [=] {h-string !                                  node with children
1 !                                            ( string {, string}* )} !
1 !                              IMPCAT !                                                 node
1 !                              LIST !                                                   node
1 !                              REQUIRED !                                               node
1 !                              TYPE [=] {builtin-type ! symbol}                         node with code or symbol
1 !
1 ! builtin-type ::=             one of a set of symbols beginning with $
1 !
1 ! cli-flag ::=                 ABBREVIATE !                                             nodes
1 !                              FOREIGN !
1 !                              IMMEDIATE !
1 !                              MCRIGNORE !
1 !                              MCROPTDELIM !
1 !                              MCRPARSE !
1 !                              NOSTATUS
1 !
1 ! bool-expr ::=                bool-term {OR bool-term}*                                node with children
1 !
1 ! bool-term ::=                bool-factor {AND bool-factor}*                           node with children
1 !
1 ! bool-factor ::=              ( bool-expr ) !                                          bool-expr node
1 !                              ANY2 ( path {, path}* ) !                                node with children
1 !                              NOT path !                                               node with child
1 !                              path
1 !
1 ! path ::=                     [< symbol >] symbol {. symbol}*                          node with children
1 !
1 ! string ::=                   " anything-but-quote* "
1 ! symbol ::=                   {$ ! 0-9 ! A-Z ! _ ! a-z}+
1 ! h-string ::=                 string !
1 !                              anything-but-open-close-comma-equal-eol+
1 !
1 !
1 ! NOTES:
1 !       Equal signs are optional in cases where they were documented
1 !       in the V3.0 documentation.
1 !       There is no provision for recognizing a number as a separate token.
```

```
;   222          0954  1 !++
;   223          0955  1 ! Description:  This parsing routine recognizes the distinguished nonterminal
;   224          0956  1 !               "cld", which represents the entire CLD file.
;   225          0957  1 !
;   226          0958  1 ! Parameters:   None.
;   227          0959  1 !
;   228          0960  1 ! Returns:      Nothing.
;   229          0961  1 !
;   230          0962  1 ! Notes:
;   231          0963  1 !--
;   232          0964  1
;   233          0965  1 GLOBAL ROUTINE cdu$cld          : novalue
;   234          0966  2 = BEGIN
;   235          0967  2
;   236          0968  2 local
;   237          0969  2         statement: ref node,
;   238          0970  2         last_statement: ref node;
;   239          0971  2
;   240          0972  2
;   241          0973  2 ! Create a root node for the tree.
;   242          0974  2
;   243          0975  2 cdu$gl_root_node = cdu$create_node(node_k_root);
;   244          0976  2
;   245          0977  2 ! Loop once for each statement in the CLD file.
;   246          0978  2
;   247          0979  2 cdu$get_next_token();
;   248          0980  3 until token_is(tkn_k_eof) do (
;   249          0981  3
;   250          0982  3         ! Statements may be separated with commas.
;   251          0983  3
;   252          0984  3         skip_optional_token(tkn_k_comma);
;   253          0985  3
;   254          0986  3         ! We must have another statement.  Parse it and link its node
;   255          0987  3         ! onto the end of the statement list.
;   256          0988  3
;   257          0989  3         statement = cdu$statement(.cdu$gl_root_node);
;   258          0990  3         link_parent_to_child(cdu$gl_root_node,statement,last_statement);
;   259          0991  2 );
;   260          0992  2
;   261          0993  2 return;
;   262          0994  2
;   263          0995  1 END;
; INFO#250                L1:0990
; Referenced LOCAL symbol LAST_STATEMENT is probably not initialized


                                                        .TITLE  PARSE1
                                                        .IDENT  \V04-000\

                                                        .PSECT  $GLOBAL$,NOEXE,2

                                                00000 CDU$GL_ROOT_NODE::
                                                        .BLKB   4

                                                        .EXTRN  CDU$BOOL_EXPR, CDU$CHECK_FOR_CHILDREN
                                                        .EXTRN  CDU$CLI_FLAG, CDU$CREATE_NODE
                                                        .EXTRN  CDU$GET_NEXT_TOKEN
```

```
                                        .EXTRN  CDU$LOOKUP_CHILD
                                        .EXTRN  CDU$PARAM_CLAUSE
                                        .EXTRN  CDU$QUAL_CLAUSE
                                        .EXTRN  CDU$REPORT_SYNTAX_ERROR
                                        .EXTRN  CDU$TOKEN_MUST_BE
                                        .EXTRN  CDU$TYPE_CLAUSE
                                        .EXTRN  CLI$PRESENT, CDU$GL_TOKEN_CLASS
                                        .EXTRN  CDU$GQ_TOKEN

                                        .PSECT  $CODE$,NOWRT,2

                              003C 00000        .ENTRY  CDU$CLD, Save R2,R3,R4,R5                       ; 0965
                    55      0000'  CF   9E 00002        MOVAB   CDU$GL_ROOT_NODE, R5
                    54 00000000G   00   9E 00007        MOVAB   CDU$GET_NEXT_TOKEN, R4
                                   01   DD 0000E        PUSHL   #1                                      ; 0975
          00000000G 00             01   FB 00010        CALLS   #1, CDU$CREATE_NODE
                    65             50   D0 00017        MOVL    R0, CDU$GL_ROOT_NODE
                    64             00   FB 0001A        CALLS   #0, CDU$GET_NEXT_TOKEN                  ; 0979
                    50 00000000G   00   D0 0001D 1$:     MOVL    CDU$GL_TOKEN_CLASS, R0                  ; 0980
                    04             50   D1 00024        CMPL    R0, #4
                                   29   13 00027        BEQL    5$
                    05             50   D1 00029        CMPL    R0, #5                                  ; 0984
                                   03   12 0002C        BNEQ    2$
                    64             00   FB 0002E        CALLS   #0, CDU$GET_NEXT_TOKEN
                                   65   DD 00031 2$:     PUSHL   CDU$GL_ROOT_NODE                        ; 0989
              0000V CF             01   FB 00033        CALLS   #1, CDU$STATEMENT
                    53             50   D0 00038        MOVL    R0, STATEMENT
                    50             65   D0 0003B        MOVL    CDU$GL_ROOT_NODE, R0                    ; 0990
                              08   A0   D5 0003E        TSTL    8(R0)
                                   06   12 00041        BNEQ    3$
                         08   A0        53   D0 00043        MOVL    STATEMENT, 8(R0)
                                        04   11 00047        BRB     4$
                         04   A2        53   D0 00049 3$:     MOVL    STATEMENT, 4(LAST_STATEMENT)
                              52        53   D0 0004D 4$:     MOVL    STATEMENT, LAST_STATEMENT
                                        CB   11 00050        BRB     1$                                  ; 0980
                                             04 00052 5$:     RET                                         ; 0995

; Routine Size:  83 bytes,    Routine Base:  $CODE$ + 0000
```

```
;  265          0996  1 !++
;  266          0997  1 ! Description:  This parsing routine recognizes a "statement", which is any
;  267          0998  1 !               of the major types of definitions that appear in a CLD.
;  268          0999  1 !
;  269          1000  1 ! Parameters:   parent          By reference, parent node of this constuct.
;  270          1001  1 !
;  271          1002  1 ! Returns:      The top-level node representing the statement.
;  272          1003  1 !
;  273          1004  1 ! Notes:
;  274          1005  1 !--
;  275          1006  1
;  276          1007  1 GLOBAL ROUTINE cdu$statement(parent: ref node)
;  277          1008  2 = BEGIN
;  278          1009  2
;  279          1010  2 local
;  280          1011  2         statement: ref node;
;  281          1012  2
;  282          1013  2
;  283          1014  2 ! Determine which kind of statement we have.
;  284          1015  2
;  285          1016  3 if token_is(tkn_k_symbol,'IDENT') then (
;  286          1017  3
;  287          1018  3         ! The IDENT statement supplies a string to be stashed in the object
;  288          1019  3         ! file.  It conflicts with any existing statement.
;  289          1020  3
;  290          1021  3         if cdu$check_for_children(.parent,node_k_ident) then
;  291          1022  3                 cdu$report_syntax_error(msg(cdu$_dupident));
;  292          1023  3
;  293          1024  3         ! The next token is the string.  Save it in a node.
;  294          1025  3
;  295          1026  3         cdu$get_next_token(tkn_k_h_string);
;  296          1027  3         statement = cdu$create_node(node_k_ident,..cdu$gq_token[len],..cdu$gq_token[ptr]);
;  297          1028  3         cdu$token_must_be(tkn_k_string);
;  298          1029  3         return .statement;
;  299          1030  2 );
;  300          1031  2
;  301          1032  3 if token_is(tkn_k_symbol,'MODULE') then (
;  302          1033  3
;  303          1034  3         ! The MODULE statement supplies a symbol to be used as the name of the
;  304          1035  3         ! CLD object module.  It conflicts with any existing statement.
;  305          1036  3
;  306          1037  3         if cdu$check_for_children(.parent,node_k_module) then
;  307          1038  3                 cdu$report_syntax_error(msg(cdu$_dupmodule));
;  308          1039  3
;  309          1040  3         ! The next token is the symbol.  Save it in a node.
;  310          1041  3
;  311          1042  3         cdu$get_next_token();
;  312          1043  3         statement = cdu$create_node(node_k_module,..cdu$gq_token[len],..cdu$gq_token[ptr]);
;  313          1044  3         cdu$token_must_be(tkn_k_symbol);
;  314          1045  3         return .statement;
;  315          1046  2 );
;  316          1047  2
;  317          1048  2 ! We must have a DEFINE statement.  Get the next token and see what kind
;  318          1049  2 ! of a DEFINE it is.  The appropriate syntax routine is called and returns
;  319          1050  2 ! the top-level node representing the statement.
;  320          1051  2
;  321          1052  2 cdu$token_must_be(tkn_k_symbol,ctext('DEFINE'));
```

```
;   322          1053  2 if token_is(tkn_k_symbol,'VERB') then
;   323          1054  2         statement = cdu$define_verb(.parent)
;   324          1055  2 else if token_is(tkn_k_symbol,'SYNTAX') then
;   325          1056  2         statement = cdu$define_syntax(.parent)
;   326          1057  2 else if token_is(tkn_k_symbol,'TYPE') then
;   327          1058  2         statement = cdu$define_type(.parent)
;   328          1059  2 else (
;   329          1060  3         cdu$report_syntax_error(msg(cdu$_invdefine));
;   330          1061  3         return cdu$create_node(node_k_error);
;   331          1062  2 );
;   332          1063  2
;   333          1064  2 ! If there is already a definition with the same name, then we have a conflict.
;   334          1065  2 ! Tell the user about it.
;   335          1066  2
;   336          1067  2 if cdu$lookup_child(.parent,.statement[node_w_type],
;   337          1068  2                     .statement[node_b_text_length],statement[node_t_text]) neqa 0 then
;   338          1069  2         cdu$report_syntax_error(msg(cdu$_dupdef),1,statement[node_b_text_length]);
;   339          1070  2 return .statement;
;   340          1071  2
;   341          1072  1 END;


                                                        .PSECT  $PLIT$,NOWRT,NOEXE,2

                                    54  4E  45  44  49  00000 P.AAA:  .ASCII  \IDENT\                                  ;
                                45  4C  55  44  4F  4D  00005 P.AAB:  .ASCII  \MODULE\                                 ;
                            45  4E  49  46  45  44  06  00008 P.AAC:  .ASCII  <6>\DEFINE\                               ;
                                    42  52  45  56  00012 P.AAD:  .ASCII  \VERB\                                     ;
                                58  41  54  4E  59  53  00016 P.AAE:  .ASCII  \SYNTAX\                                   ;
                                        45  50  59  54  0001C P.AAF:  .ASCII  \TYPE\                                    ;

                                                        .EXTRN  CDU$_DUPIDENT, CDU$_DUPMODULE
                                                        .EXTRN  CDU$_INVDEFINE, CDU$_DUPDEF

                                                        .PSECT  $CODE$,NOWRT,2

                                            0FFC 00000          .ENTRY  CDU$STATEMENT, Save R2,R3,R4,R5,R6,R7,R8,-      ; 1007
                                                                        R9,R10,R11
                                5B 00000000G    00  9E 00002    MOVAB   CDU$CHECK_FOR_CHILDREN, R11                      ;
                                5A 00000000G    00  9E 00009    MOVAB   CDU$GL_TOKEN_CLASS, R10                          ;
                                59 00000000G    00  9E 00010    MOVAB   CDU$CREATE_NODE, R9                              ;
                                58      0000'   CF  9E 00017    MOVAB   P.AAA, R8                                       ;
                                57 00000000G    00  9E 0001C    MOVAB   CDU$REPORT_SYNTAX_ERROR, R7                      ;
                                56 00000000G    00  9E 00023    MOVAB   CDU$GQ_TOKEN+4, R6                              ;
                                0D              6A  D1 0002A    CMPL    CDU$GL_TOKEN_CLASS, #13                         ; 1016
                                                3B  12 0002D    BNEQ    2$                                              ;
                                50              66  D0 0002F    MOVL    CDU$GQ_TOKEN+4, R0                              ;
                05      00      60      FC      A6  2D 00032    CMPC5   CDU$GQ_TOKEN, (R0), #0, #5, P.AAA               ;
                                                68      00038                                                           ;
                                                2F  12 00039    BNEQ    2$                                              ;
                                                02  DD 0003B    PUSHL   #2                                              ; 1021
                                            04  AC  DD 0003D    PUSHL   PARENT                                          ;
                                6B              02  FB 00040    CALLS   #2, CDU$CHECK_FOR_CHILDREN                      ;
                                09              50  E9 00043    BLBC    R0, 1$                                          ;
                                    00000000G   8F  DD 00046    PUSHL   #CDU$_DUPIDENT                                  ; 1022
                                67              01  FB 0004C    CALLS   #1, CDU$REPORT_SYNTAX_ERROR                     ;
```

```
                                        0C   DD 0004F 1$:     PUSHL   #12                                                     ;1026
                00000000G   00          01   FB 00051         CALLS   #1, CDU$GET_NEXT_TOKEN
                                        66   DD 00058         PUSHL   CDU$GQ_TOKEN+4                                         ;1027
                            7E      FC  A6   3C 0005A         MOVZWL  CDU$GQ_TOKEN, -(SP)
                                        02   DD 0005E         PUSHL   #2
                            69          03   FB 00060         CALLS   #3, CDU$CREATE_NODE
                            54          50   D0 00063         MOVL    R0, STATEMENT
                                        0B   DD 00066         PUSHL   #11                                                    ;1028
                                        3D   11 00068         BRB     4$
                            0D          6A   D1 0006A 2$:     CMPL    CDU$GL_TOKEN_CLASS, #13                                ;1032
                                        42   12 0006D         BNEQ    5$
                            50          66   D0 0006F         MOVL    CDU$GQ_TOKEN+4, R0
        06          00      60      FC  A6   2D 00072         CMPC5   CDU$GQ_TOKEN, (R0), #0, #6, P.AAB
                                    05  A8       00078
                                        35   12 0007A         BNEQ    5$
                                        03   DD 0007C         PUSHL   #3                                                     ;1037
                                04      AC   DD 0007E         PUSHL   PARENT
                            68          02   FB 00081         CALLS   #2, CDU$CHECK_FOR_CHILDREN
                            09          50   E9 00084         BLBC    R0, 3$
                                00000000G   8F   DD 00087     PUSHL   #CDU$_DUPMODULE                                        ;1038
                            67          01   FB 0008D         CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                00000000G   00          00   FB 00090 3$:     CALLS   #0, CDU$GET_NEXT_TOKEN                                 ;1042
                                        66   DD 00097         PUSHL   CDU$GQ_TOKEN+4                                         ;1043
                            7E      FC  A6   3C 00099         MOVZWL  CDU$GQ_TOKEN, -(SP)
                                        03   DD 0009D         PUSHL   #3
                            69          03   FB 0009F         CALLS   #3, CDU$CREATE_NODE
                            54          50   D0 000A2         MOVL    R0, STATEMENT
                                        0D   DD 000A5         PUSHL   #13                                                    ;1044
                00000000G   00          01   FB 000A7 4$:     CALLS   #1, CDU$TOKEN_MUST_BE
                                    0098    31   000AE         BRW     11$                                                    ;1045
                                08      A8   9F 000B1 5$:     PUSHAB  P.AAC                                                  ;1052
                                        0D   DD 000B4         PUSHL   #13
                00000000G   00          02   FB 000B6         CALLS   #2, CDU$TOKEN_MUST_BE
                                        55   D4 000BD         CLRL    R5                                                     ;1053
                            0D          6A   D1 000BF         CMPL    CDU$GL_TOKEN_CLASS, #13
                                        19   12 000C2         BNEQ    6$
                                        55   D6 000C4         INCL    R5
                            50          66   D0 000C6         MOVL    CDU$GQ_TOKEN+4, R0
        04          00      60      FC  A6   2D 000C9         CMPC5   CDU$GQ_TOKEN, (R0), #0, #4, P.AAD
                                    12  A8       000CF
                                        0A   12 000D1         BNEQ    6$
                                04      AC   DD 000D3         PUSHL   PARENT                                                 ;1054
                        0000V   CF          01   FB 000D6         CALLS   #1, CDU$DEFINE_VERB
                                        32   11 000DB         BRB     8$
                            34          55   E9 000DD 6$:     BLBC    R5, 9$                                                 ;1055
                            50          66   D0 000E0         MOVL    CDU$GQ_TOKEN+4, R0
        06          00      60      FC  A6   2D 000E3         CMPC5   CDU$GQ_TOKEN, (R0), #0, #6, P.AAE
                                    16  A8       000E9
                                        0A   12 000EB         BNEQ    7$
                                04      AC   DD 000ED         PUSHL   PARENT                                                 ;1056
                        0000V   CF          01   FB 000F0         CALLS   #1, CDU$DEFINE_SYNTAX
                                        18   11 000F5         BRB     8$
                            1A          55   E9 000F7 7$:     BLBC    R5, 9$                                                 ;1057
                            50          66   D0 000FA         MOVL    CDU$GQ_TOKEN+4, R0
        04          00      60      FC  A6   2D 000FD         CMPC5   CDU$GQ_TOKEN, (R0), #0, #4, P.AAF
                                    1C  A8       00103
                                        0D   12 00105         BNEQ    9$
```

```
                                    04   AC   DD 00107          PUSHL   PARENT                                          ; 1058
                          0000V     CF        01   FB 0010A          CALLS   #1, CDU$DEFINE_TYPE
                                    54        50   D0 0010F 8$:       MOVL    R0, STATEMENT
                                              0F   11 00112          BRB     10$
                                00000000G   8F   DD 00114 9$:       PUSHL   #CDU$_INVDEFINE                           ; 1060
                                    67        01   FB 0011A          CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                                              7E   D4 0011D          CLRL    -(SP)                                     ; 1061
                                    69        01   FB 0011F          CALLS   #1, CDU$CREATE_NODE
                                              04   00122            RET
                                    11   A4   9F   00123 10$:       PUSHAB  17(STATEMENT)                             ; 1068
                                    7E   10   A4   9A 00126          MOVZBL  16(STATEMENT), -(SP)
                                    7E   64   3C   0012A            MOVZWL  (STATEMENT), -(SP)
                                         04   AC   DD 0012D          PUSHL   PARENT
                          00000000G     00        04   FB 00130          CALLS   #4, CDU$LOOKUP_CHILD
                                              50   D5 00137          TSTL    R0
                                              0E   13 00139          BEQL    11$
                                    10   A4   9F   0013B            PUSHAB  16(STATEMENT)                             ; 1069
                                              01   DD 0013E          PUSHL   #1
                                00000000G   8F   DD 00140          PUSHL   #CDU$_DUPDEF
                                    67        03   FB 00146          CALLS   #3, CDU$REPORT_SYNTAX_ERROR
                                    50        54   D0 00149 11$:      MOVL    STATEMENT, R0                             ; 1070
                                              04   0014C            RET                                               ; 1072

; Routine Size:  333 bytes,    Routine Base:  $CODE$ + 0053
```

```
;  343          1073  1 !++
;  344          1074  1 ! Description:  This parsing routine recognizes the "define-verb" construct,
;  345          1075  1 !               which is used to define a new DCL verb.
;  346          1076  1 !
;  347          1077  1 ! Parameters:   parent          By reference, parent node of this constuct.
;  348          1078  1 !
;  349          1079  1 ! Returns:      By reference, the top-level node of the statement.
;  350          1080  1 !
;  351          1081  1 ! Notes:
;  352          1082  1 !--
;  353          1083  1
;  354          1084  1 GLOBAL ROUTINE cdu$define_verb(parent: ref node)
;  355          1085  2 = BEGIN
;  356          1086  2
;  357          1087  2 local
;  358          1088  2         statement: ref node,
;  359          1089  2         clause: ref node,
;  360          1090  2         last_clause: ref node;
;  361          1091  2
;  362          1092  2
;  363          1093  2 ! The next token must be the name of the verb.  Create anode to represent the
;  364          1094  2 ! statement and put the name in it.
;  365          1095  2
;  366          1096  2 cdu$get_next_token();
;  367          1097  2 statement = cdu$create_node(node_k_define_verb,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  368          1098  2 cdu$token_must_be(tkn_k_symbol);
;  369          1099  2
;  370          1100  2 ! Now we have a sequence of clauses which describe the verb.
;  371          1101  2
;  372          1102  2 loop (
;  373          1103  2         ! The clauses may be separated by commas.
;  374          1104  2
;  375          1105  2         skip_optional_token(tkn_k_comma);
;  376          1106  2
;  377          1107  2         ! Parse a clause.  If there weren't any more, then we are done.
;  378          1108  2         ! Otherwise link the clause node on to the end of the clause chain.
;  379          1109  2
;  380          1110  2         clause = cdu$v_s_clause(.statement);
;  381          1111  2         if .clause eqla 0 then exitloop;
;  382          1112  2         link_parent_to_child(statement,clause,last_clause);
;  383          1113  2 );
;  384          1114  2
;  385          1115  2 return .statement;
;  386          1116  2
;  387          1117  1 END;
; %INFO-I-250                  L1:1112
; Referenced LOCAL symbol LAST_CLAUSE is probably not initialized


;                                 003C 00000         .ENTRY  CDU$DEFINE_VERB, Save R2,R3,R4,R5          ; 1084
;                       55 00000000G  00   9E 00002  MOVAB   CDU$GET_NEXT_TOKEN, R5                     ;
;                       65            00   FB 00009  CALLS   #0, CDU$GET_NEXT_TOKEN                    ; 1096
;                          00000000G  00   DD 0000C  PUSHL   CDU$GQ_TOKEN+4                            ; 1097
;                       7E 00000000G  00   3C 00012  MOVZWL  CDU$GQ_TOKEN, -(SP)                       ;
```

```
                                      04 DD 00019          PUSHL  #4                                   ;
          00000000G  00               03 FB 0001B          CALLS  #3, CDU$CREATE_NODE                  ;
                     54               50 D0 00022          MOVL   R0, STATEMENT                        ;
                                      0D DD 00025          PUSHL  #13                                  ; 1098
          00000000G  00               01 FB 00027          CALLS  #1, CDU$TOKEN_MUST_BE                ;
                     05  00000000G    00 D1 0002E 1$:      CMPL   CDU$GL_TOKEN_CLASS, #5               ; 1105
                                      03 12 00035          BNEQ   2$                                   ;
                     65               00 FB 00037          CALLS  #0, CDU$GET_NEXT_TOKEN               ;
                                      54 DD 0003A 2$:      PUSHL  STATEMENT                            ; 1110
              0000V  CF               01 FB 0003C          CALLS  #1, CDU$V_S_CLAUSE                   ;
                     53               50 D0 00041          MOVL   R0, CLAUSE                           ;
                                      14 13 00044          BEQL   5$                                   ; 1111
                               08     A4 D5 00046          TSTL   8(STATEMENT)                         ; 1112
                                      06 12 00049          BNEQ   3$                                   ;
                 08  A4               53 D0 0004B          MOVL   CLAUSE, 8(STATEMENT)                 ;
                                      04 11 0004F          BRB    4$                                   ;
                 04  A2               53 D0 00051 3$:      MOVL   CLAUSE, 4(LAST_CLAUSE)               ;
                     52               53 D0 00055 4$:      MOVL   CLAUSE, LAST_CLAUSE                  ;
                                      D4 11 00058          BRB    1$                                   ; 1098
                     50               54 D0 0005A 5$:      MOVL   STATEMENT, R0                        ; 1115
                                         04 0005D          RET                                         ; 1117
```

; Routine Size: 94 bytes,   Routine Base: $CODE$ + 01A0

```
;  389          1118  1 !++
;  390          1119  1 ! Description:  This parsing routine recognizes the "define-syntax" construct,
;  391          1120  1 !               which is used to alter the syntax of a command based on the
;  392          1121  1 !               presence of some qualifier.
;  393          1122  1 !
;  394          1123  1 ! Parameters:   parent          By reference, parent node of this constuct.
;  395          1124  1 !
;  396          1125  1 ! Returns:      By reference, the top-level node of the statement.
;  397          1126  1 !
;  398          1127  1 ! Notes:
;  399          1128  1 !--
;  400          1129  1
;  401          1130  1 GLOBAL ROUTINE cdu$define_syntax(parent: ref node)
;  402          1131  2 = BEGIN
;  403          1132  2
;  404          1133  2 local
;  405          1134  2         statement: ref node,
;  406          1135  2         clause: ref node,
;  407          1136  2         last_clause: ref node;
;  408          1137  2
;  409          1138  2
;  410          1139  2 ! The next token must be the name of the syntax definition.  Create a node to
;  411          1140  2 ! represent the statement and put the name in it.
;  412          1141  2
;  413          1142  2 cdu$get_next_token();
;  414          1143  2 statement = cdu$create_node(node_k_define_syntax,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  415          1144  2 cdu$token_must_be(tkn_k_symbol);
;  416          1145  2
;  417          1146  2 ! Now we have a sequence of clauses which describe the new syntax.
;  418          1147  2
;  419          1148  2 loop {
;  420          1149  2         ! The clauses may be separated by commas.
;  421          1150  2
;  422          1151  2         skip_optional_token(tkn_k_comma);
;  423          1152  2
;  424          1153  2         ! Parse a clause.  If there weren't any more, then we are done.
;  425          1154  2         ! Otherwise link the clause node on to the end of the clause chain.
;  426          1155  2
;  427          1156  2         clause = cdu$v_s_clause(.statement);
;  428          1157  2         if .clause eqla 0 then exitloop;
;  429          1158  2         link_parent_to_child(statement,clause,last_clause);
;  430          1159  2 };
;  431          1160  2
;  432          1161  2 return .statement;
;  433          1162  2
;  434          1163  1 END;
; INFO#250                L1:1158
; Referenced LOCAL symbol LAST_CLAUSE is probably not initialized


                                  003C 00000         .ENTRY  CDU$DEFINE_SYNTAX, Save R2,R3,R4,R5          ; 1130
                      55 00000000G  00  9E 00002     MOVAB   CDU$GET_NEXT_TOKEN, R5                       ;
                      65            00  FB 00009     CALLS   #0, CDU$GET_NEXT_TOKEN                       ; 1142
                         00000000G  00  DD 0000C     PUSHL   CDU$GQ_TOKEN+4                               ; 1143
```

```
                         7E 00000000G   00  3C 00012          MOVZWL  CDU$GQ_TOKEN, -(SP)                                 ;
                                        05  DD 00019          PUSHL   #5                                                  ;
                00000000G   00          03  FB 0001B          CALLS   #3, CDU$CREATE_NODE                                 ;
                            54          50  D0 00022          MOVL    R0, STATEMENT                                       ;
                                        0D  DD 00025          PUSHL   #13                                                 ; 1144
                00000000G   00          01  FB 00027          CALLS   #1, CDU$TOKEN_MUST_BE                               ;
                            05 00000000G   00  D1 0002E 1$:     CMPL    CDU$GL_TOKEN_CLASS, #5                          ; 1151
                                        03  12 00035          BNEQ    2$                                                  ;
                            65          00  FB 00037          CALLS   #0, CDU$GET_NEXT_TOKEN                              ;
                                        54  DD 0003A 2$:       PUSHL   STATEMENT                                           ; 1156
                      0000V CF          01  FB 0003C          CALLS   #1, CDU$V_S_CLAUSE                                  ;
                            53          50  D0 00041          MOVL    R0, CLAUSE                                          ;
                                        14  13 00044          BEQL    5$                                                  ; 1157
                                  08    A4  D5 00046          TSTL    8(STATEMENT)                                        ; 1158
                                        06  12 00049          BNEQ    3$                                                  ;
                         08     A4          53  D0 0004B          MOVL    CLAUSE, 8(STATEMENT)                            ;
                                        04  11 0004F          BRB     4$                                                  ;
                         04     A2          53  D0 00051 3$:       MOVL    CLAUSE, 4(LAST_CLAUSE)                          ;
                                52          53  D0 00055 4$:       MOVL    CLAUSE, LAST_CLAUSE                             ;
                                        D4  11 00058          BRB     1$                                                  ; 1144
                                50          54  D0 0005A 5$:       MOVL    STATEMENT, R0                                   ; 1161
                                            04  0005D          RET                                                         ; 1163

; Routine Size:  94 bytes,    Routine Base:  $CODE$ + 01FE
```

```
;  436          1164  1 !++
;  437          1165  1 ! Description:  This parsing routine recognizes the "define-type" construct,
;  438          1166  1 !               which is used to define a set of keywords which some
;  439          1167  1 !               qualifier can take as values.
;  440          1168  1 !
;  441          1169  1 ! Parameters:   parent          By reference, parent node of this constuct.
;  442          1170  1 !
;  443          1171  1 ! Returns:      By reference, the top-level node of the statement.
;  444          1172  1 !
;  445          1173  1 ! Notes:
;  446          1174  1 !--
;  447          1175  1
;  448          1176  1 GLOBAL ROUTINE cdu$define_type(parent: ref node)
;  449          1177  2 = BEGIN
;  450          1178  2
;  451          1179  2 local
;  452          1180  2         statement: ref node,
;  453          1181  2         clause: ref node,
;  454          1182  2         last_clause: ref node;
;  455          1183  2
;  456          1184  2
;  457          1185  2 ! The next token must be the name of the type definition.  Create a node to
;  458          1186  2 ! represent the statement and put the name in it.
;  459          1187  2
;  460          1188  2 cdu$get_next_token();
;  461          1189  2 statement = cdu$create_node(node_k_define_type,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  462          1190  2 cdu$token_must_be(tkn_k_symbol);
;  463          1191  2
;  464          1192  2 ! Now we have a sequence of clauses which describe the type keywords.
;  465          1193  2
;  466          1194  2 loop (
;  467          1195  2         ! The clauses may be separated by commas.
;  468          1196  2
;  469          1197  2         skip_optional_token(tkn_k_comma);
;  470          1198  2
;  471          1199  2         ! Parse a clause.  If there weren't any more, then we are done.
;  472          1200  2         ! Otherwise link the clause node on to the end of the clause chain.
;  473          1201  2
;  474          1202  2         clause = cdu$type_clause(,statement);
;  475          1203  2         if .clause eqla 0 then exitloop;
;  476          1204  2         link_parent_to_child(statement,clause,last_clause);
;  477          1205  2 );
;  478          1206  2
;  479          1207  2 ! A type definition must include at least one keyword.
;  480          1208  2
;  481          1209  2 if not cdu$check_for_children(.statement,node_k_keyword) then
;  482          1210  2         cdu$report_syntax_error(msg(cdu$_reqkey),1,statement[node_b_text_length]);
;  483          1211  2 return .statement;
;  484          1212  2
;  485          1213  1 END;
; INFO#250                  L1:1204
; Referenced LOCAL symbol LAST_CLAUSE is probably not initialized

                                                        .EXTRN  CDU$_REQKEY
```

```
                                 003C 00000          .ENTRY  CDU$DEFINE_TYPE, Save R2,R3,R4,R5                       ; 1176
                              55 00000000G   00  9E 00002          MOVAB   CDU$GET_NEXT_TOKEN, R5
                              65             00  FB 00009          CALLS   #0, CDU$GET_NEXT_TOKEN                      ; 1188
                                 00000000G   00  DD 0000C          PUSHL   CDU$GQ_TOKEN+4                              ; 1189
                              7E 00000000G   00  3C 00012          MOVZWL  CDU$GQ_TOKEN, -(SP)
                                             06  DD 00019          PUSHL   #6
                    00000000G 00                 03  FB 0001B          CALLS   #3, CDU$CREATE_NODE
                              52                 50  D0 00022          MOVL    R0, STATEMENT
                                                 0D  DD 00025          PUSHL   #13                                 ; 1190
                    00000000G 00                 01  FB 00027          CALLS   #1, CDU$TOKEN_MUST_BE
                              05 00000000G       00  D1 0002E 1$:      CMPL    CDU$GL_TOKEN_CLASS, #5              ; 1197
                                                 03  12 00035          BNEQ    2$
                              65                 00  FB 00037          CALLS   #0, CDU$GET_NEXT_TOKEN
                                                 52  DD 0003A 2$:      PUSHL   STATEMENT                           ; 1202
                    00000000G 00                 01  FB 0003C          CALLS   #1, CDU$TYPE_CLAUSE
                              54                 50  D0 00043          MOVL    R0, CLAUSE
                                                 14  13 00046          BEQL    5$                                  ; 1203
                                       08        A2  D5 00048          TSTL    8(STATEMENT)                        ; 1204
                                                 06  12 0004B          BNEQ    3$
                                 08    A2        54  D0 0004D          MOVL    CLAUSE, 8(STATEMENT)
                                                 04  11 00051          BRB     4$
                                 04    A3        54  D0 00053 3$:      MOVL    CLAUSE, 4(LAST_CLAUSE)
                                       53        54  D0 00057 4$:      MOVL    CLAUSE, LAST_CLAUSE
                                                 D2  11 0005A          BRB     1$                                  ; 1190
                                                 18  DD 0005C 5$:      PUSHL   #24                                 ; 1209
                                                 52  DD 0005E          PUSHL   STATEMENT
                    00000000G 00                 02  FB 00060          CALLS   #2, CDU$CHECK_FOR_CHILDREN
                                                 12  50  E8 00067          BLBS    R0, 6$
                                          10     A2  9F 0006A          PUSHAB  16(STATEMENT)                       ; 1210
                                                 01  DD 0006D          PUSHL   #1
                                    00000000G    8F  DD 0006F          PUSHL   #CDU$_REQKEY
                          00000000G 00                 03  FB 00075          CALLS   #3, CDU$REPORT_SYNTAX_ERROR
                                    50                 52  D0 0007C 6$:      MOVL    STATEMENT, R0               ; 1211
                                                       04  0007F          RET                                 ; 1213

; Routine Size:  128 bytes,    Routine Base:  $CODE$ + 025C
```

```
;  487          1214  1 !++
;  488          1215  1 ! Description:  This syntax routine recognizes the "v-s-clause" construct,
;  489          1216  1 !               which are the clauses used to describe a verb or syntax
;  490          1217  1 !               definition.
;  491          1218  1 !
;  492          1219  1 ! Parameters:   parent          By reference, parent node of this constuct.
;  493          1220  1 !
;  494          1221  1 ! Returns:      The top-level node representing the clause, or zero if
;  495          1222  1 !               there is no clause we recognize.
;  496          1223  1 !
;  497          1224  1 ! Notes:
;  498          1225  1 !--
;  499          1226  1
;  500          1227  1 GLOBAL ROUTINE cdu$v_s_clause(parent: ref node)
;  501          1228  2 = BEGIN
;  502          1229  2
;  503          1230  2 local
;  504          1231  2         clause: ref node,
;  505          1232  2         item: ref node,
;  506          1233  2         last_item: ref node;
;  507          1234  2
;  508          1235  2
;  509          1236  2 ! Determine which kind of clause we have.
;  510          1237  2
;  511          1238  2 if token_is(tkn_k_symbol,'CLIFLAGS') then (
;  512          1239  3
;  513          1240  3         ! We have a CLIFLAGS clause.  Create a parent node for the flags.
;  514          1241  3
;  515          1242  3         clause = cdu$create_node(node_k_cliflags);
;  516          1243  3         cdu$get_next_token();
;  517          1244  3
;  518          1245  3         ! We have a parenthesized list of CLI flags.
;  519          1246  3         ! Eat the open parenthesis.  Then sit in a loop which recognizes at
;  520          1247  3         ! least one item, along with any others separated by commas.  Finally,
;  521          1248  3         ! eat the close parenthesis.  All of the items are chained as children
;  522          1249  3         ! of the clause.
;  523          1250  3
;  524          1251  3         cdu$token_must_be(tkn_k_open_paren);
;  525          1252  4         loop (
;  526          1253  4                 item = cdu$cli_flag(.clause);
;  527          1254  4                 link_parent_to_child(clause,item,last_item);
;  528          1255  4                 if not token_is(tkn_k_comma) then exitloop;
;  529          1256  4                 cdu$get_next_token();
;  530          1257  4         );
;  531          1258  3         cdu$token_must_be(tkn_k_close_paren);
;  532          1259  3         return .clause;
;  533          1260  2 );
;  534          1261  2
;  535          1262  2 if token_is(tkn_k_symbol,'CLIROUTINE') then (
;  536          1263  3
;  537          1264  3         ! We have a CLIROUTINE clause.  It conflicts with any existing
;  538          1265  3         ! CLIROUTINE, IMAGE, or ROUTINE clause.
;  539          1266  3
;  540          1267  3         if cdu$check_for_children(.parent,node_k_cliroutine,node_k_image,node_k_routine) then
;  541          1268  3                 cdu$report_syntax_error(msg(cdu$_confroutimg));
;  542          1269  3
;  543          1270  3         ! Next we have a symbol which is the name of an internal CLI
```

```
;  544          1271  3          ! routine that processes the command.  Create a node with the
;  545          1272  3          ! symbol.
;  546          1273  3
;  547          1274  3          cdu$get_next_token();
;  548          1275  3          clause = cdu$create_node(node_k_cliroutine,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  549          1276  3          cdu$token_must_be(tkn_k_symbol);
;  550          1277  3          return .clause;
;  551          1278  2      );
;  552          1279  2
;  553          1280  2      if token_is(tkn_k_symbol,'DISALLOW') then (
;  554          1281  2
;  555          1282  3          ! We have a DISALLOW clause.  It conflicts with any existing
;  556          1283  3          ! NODISALLOWS clause.
;  557          1284  3
;  558          1285  3          if cdu$check_for_children(.parent,node_k_nodisallows) then
;  559          1286  3                  cdu$report_syntax_error(msg(cdu$_confnodis));
;  560          1287  3
;  561          1288  3          ! Create a node for the clause.
;  562          1289  3
;  563          1290  3          clause = cdu$create_node(node_k_disallow);
;  564          1291  3          cdu$get_next_token();
;  565          1292  3
;  566          1293  3          ! We now have a boolean expression.  Chain it on to the parent node.
;  567          1294  3
;  568          1295  3          clause[node_l_child] = cdu$bool_expr();
;  569          1296  3          return .clause;
;  570          1297  2      );
;  571          1298  2
;  572          1299  2      if token_is(tkn_k_symbol,'NODISALLOWS') then (
;  573          1300  2
;  574          1301  3          ! We have a NODISALLOWS clause.  It is represented by a node.
;  575          1302  3          ! This clause conflicts with any existing DISALLOW clause.
;  576          1303  3
;  577          1304  3          if cdu$check_for_children(.parent,node_k_disallow) then
;  578          1305  3                  cdu$report_syntax_error(msg(cdu$_confdis));
;  579          1306  3
;  580          1307  3          cdu$get_next_token();
;  581          1308  3          return cdu$create_node(node_k_nodisallows);
;  582          1309  2      );
;  583          1310  2
;  584          1311  2      if token_is(tkn_k_symbol,'IMAGE') then (
;  585          1312  2
;  586          1313  3          ! We have an IMAGE clause.  It conflicts with any existing
;  587          1314  3          ! CLIROUTINE, IMAGE, or ROUTINE clause.
;  588          1315  3
;  589          1316  3          if cdu$check_for_children(.parent,node_k_cliroutine,node_k_image,node_k_routine) then
;  590          1317  3                  cdu$report_syntax_error(msg(cdu$_confroutimg));
;  591          1318  3
;  592          1319  3          ! Now we have a string or an h-string which is the spec of the image
;  593          1320  3          ! to be activated for this command.
;  594          1321  3
;  595          1322  3          cdu$get_next_token(tkn_k_h_string);
;  596          1323  3
;  597          1324  3          ! Strip trailing blanks and tabs
;  598          1325  3
;  599          1326  3          while ch$rchar(.cdu$gq_token[ptr]+.cdu$gq_token[len]-1) EQL %C' '
;  600          1327  3              or ch$rchar(.cdu$gq_token[ptr]+.cdu$gq_token[len]-1) EQL %C'	'
```

```
;  601          1328  3          do cdu$gq_token[len] = .cdu$gq_token[len] - 1;
;  602          1329  3      clause = cdu$create_node(node_k_image,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  603          1330  3
;  604          1331  3      ! Make sure the string isn't too long.
;  605          1332  3
;  606          1333  3      if .clause[node_b_text_length] gtru cmd_k_max_image-1 then
;  607          1334  3          cdu$report_syntax_error(msg(cdu$_imagelen),1,cmd_k_max_image-1);
;  608          1335  3
;  609          1336  3      cdu$token_must_be(tkn_k_string);
;  610          1337  3      return .clause;
;  611          1338  2  );
;  612          1339  2
;  613          1340  2  if token_is(tkn_k_symbol,'OUTPUTS') then (
;  614          1341  3
;  615          1342  3      ! We have an OUTPUTS clause.  It conflicts with an existing clause.
;  616          1343  3
;  617          1344  3      if cdu$check_for_children(.parent,node_k_outputs) then
;  618          1345  3          cdu$report_syntax_error(msg(cdu$_confoutputs));
;  619          1346  3
;  620          1347  3      ! Create a node to represent the clause.
;  621          1348  3
;  622          1349  3      clause = cdu$create_node(node_k_outputs);
;  623          1350  3      cdu$get_next_token();
;  624          1351  3
;  625          1352  3      ! We have a parenthesized list of output items.
;  626          1353  3      ! Eat the open parenthesis.  Then sit in a loop which recognizes at
;  627          1354  3      ! least one item, along with any others separated by commas.  Finally,
;  628          1355  3      ! eat the close parenthesis.  All of the items are chained as children
;  629          1356  3      ! of the clause.
;  630          1357  3
;  631          1358  3      cdu$token_must_be(tkn_k_open_paren);
;  632          1359  4      loop (
;  633          1360  4          item = cdu$create_node(node_k_outputs_item,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  634          1361  4          cdu$token_must_be(tkn_k_symbol);
;  635          1362  4          link_parent_to_child(clause,item,last_item);
;  636          1363  4          if not token_is(tkn_k_comma) then exitloop;
;  637          1364  4          cdu$get_next_token();
;  638          1365  3      );
;  639          1366  3      cdu$token_must_be(tkn_k_close_paren);
;  640          1367  3      return .clause;
;  641          1368  2  );
;  642          1369  2
;  643          1370  2  if token_is(tkn_k_symbol,'PARAMETER') then (
;  644          1371  3
;  645          1372  3      ! We have a PARAMETER definition.  It conflicts with any existing
;  646          1373  3      ! NOPARAMETERS clause.
;  647          1374  3
;  648          1375  3      if cdu$check_for_children(.parent,node_k_noparameters) then
;  649          1376  3          cdu$report_syntax_error(msg(cdu$_confnoparm));
;  650          1377  3
;  651          1378  3      ! The first thing is the parameter name.  Create a node for it.
;  652          1379  3
;  653          1380  3      cdu$get_next_token();
;  654          1381  3      clause = cdu$create_node(node_k_parameter,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  655          1382  3
;  656          1383  3      ! Ensure that the parameter name is in the form Pn.
;  657          1384  3
```

```
;  658          1385  4          (bind
;  659          1386  4                  name = .cdu$gq_token[ptr]: vector[,byte];
;  660          1387  4
;  661          1388  4          if .cdu$gq_token[len] nequ 2 or
;  662          1389  4             .name[0] nequ 'P' or
;  663          1390  4             .name[1] lssu '1' or .name[1] gtru '0'+cmd_k_max_parms then
;  664          1391  4                  cdu$report_syntax_error(msg(cdu$_invparm));
;  665          1392  4          );
;  666          1393  4          cdu$token_must_be(tkn_k_symbol);
;  667          1394  4
;  668          1395  4          ! We have a list of parameter definition clauses.  Each is optionally
;  669          1396  4          ! preceded by a comma.  All of the items are chained as children of the
;  670          1397  4          ! main parameter clause.
;  671          1398  4
;  672          1399  4          loop (
;  673          1400  4                  skip_optional_token(tkn_k_comma);
;  674          1401  4                  item = cdu$param_clause(.clause);
;  675          1402  4                  if .item eqla 0 then exitloop;
;  676          1403  4                  link_parent_to_child(clause,item,last_item);
;  677          1404  4          );
;  678          1405  4
;  679          1406  4          return .clause;
;  680          1407  );
;  681          1408
;  682          1409  if token_is(tkn_k_symbol,'NOPARAMETERS') then (
;  683          1410
;  684          1411          ! We have a NOPARAMETERS clause.  It is represented by a node.
;  685          1412          ! This clause conflicts with any existing PARAMETER clause.
;  686          1413
;  687          1414          if cdu$check_for_children(.parent,node_k_parameter) then
;  688          1415                  cdu$report_syntax_error(msg(cdu$_confparm));
;  689          1416
;  690          1417          cdu$get_next_token();
;  691          1418          return cdu$create_node(node_k_noparameters);
;  692          1419  );
;  693          1420
;  694          1421  if token_is(tkn_k_symbol,'PREFIX') then (
;  695          1422
;  696          1423          ! We have an PREFIX clause.  It conflicts with any existing clause.
;  697          1424
;  698          1425          if cdu$check_for_children(.parent,node_k_prefix) then
;  699          1426                  cdu$report_syntax_error(msg(cdu$_dupprefix));
;  700          1427
;  701          1428          ! Now we have a symbol which is the prefix.  Create a node and put
;  702          1429          ! the symbol in it.
;  703          1430
;  704          1431          cdu$get_next_token();
;  705          1432          clause = cdu$create_node(node_k_prefix,.cdu$gq_token[len],.cdu$gq_token[ptr]);
;  706          1433          cdu$token_must_be(tkn_k_symbol);
;  707          1434          return .clause;
;  708          1435  );
;  709          1436
;  710          1437  if token_is(tkn_k_symbol,'QUALIFIER') then (
;  711          1438
;  712          1439          ! We have a QUALIFIER definition.  It conflicts with any existing
;  713          1440          ! NOQUALIFIERS clause.
;  714          1441
```

```
;   715          1442  3          if cdu$check_for_children(.parent,node_k_noqualifiers) then
;   716          1443  3                  cdu$report_syntax_error(msg(cdu$_confnoqual));
;   717          1444  3
;   718          1445  3          ! The next item is the name of the qualifier.  Create a node for it.
;   719          1446  3
;   720          1447  3          cdu$get_next_token();
;   721          1448  3          clause = cdu$create_node(node_k_qualifier,..cdu$gq_token[len],..cdu$gq_token[ptr]);
;   722          1449  3
;   723          1450  3          ! The definition also conflicts with any existing definition of the
;   724          1451  3          ! same name.  However, we can't check for this in V4 because of
;   725          1452  3          ! layered products with the ZZZZ qualifier placeholder hacks in
;   726          1453  3          ! their CLDs (VMS' fault, not theirs).
;   727          1454  3
;   728          1455  3  !       if cdu$lookup_child(.parent,node_k_qualifier,
;   729          1456  3  !                           .clause[node_b_text_length],clause[node_t_text]) neqa 0 then
;   730          1457  3  !               cdu$report_syntax_error(msg(cdu$_dupqual),1,clause[node_b_text_length]);
;   731          1458  3          cdu$token_must_be(tkn_k_symbol);
;   732          1459  3
;   733          1460  3          ! We have a list of qualifier definition clauses.  Each is optionally
;   734          1461  3          ! preceded by a comma.  All of the items are chained as children of the
;   735          1462  3          ! main qualifier clause.
;   736          1463  3
;   737          1464  4          loop (
;   738          1465  4                  skip_optional_token(tkn_k_comma);
;   739          1466  4                  item = cdu$qual_clause(.clause);
;   740          1467  4                  if .item eqla 0 then exitloop;
;   741          1468  4                  link_parent_to_child(clause,item,last_item);
;   742          1469  4          );
;   743          1470  3
;   744          1471  3          return .clause;
;   745          1472  2  );
;   746          1473  2
;   747          1474  2  if token_is(tkn_k_symbol,'NOQUALIFIERS') then (
;   748          1475  3
;   749          1476  3          ! We have a NOQUALIFIERS clause.  It is represented by a node.
;   750          1477  3          ! This clause conflicts with any existing QUALIFIER clause.
;   751          1478  3
;   752          1479  3          if cdu$check_for_children(.parent,node_k_qualifier) then
;   753          1480  3                  cdu$report_syntax_error(msg(cdu$_confqual));
;   754          1481  3
;   755          1482  3          cdu$get_next_token();
;   756          1483  3          return cdu$create_node(node_k_noqualifiers);
;   757          1484  2  );
;   758          1485  2
;   759          1486  2  if token_is(tkn_k_symbol,'ROUTINE') then (
;   760          1487  3
;   761          1488  3          ! We have an ROUTINE clause.  It conflicts with any existing
;   762          1489  3          ! CLIROUTINE, IMAGE, or ROUTINE clause.
;   763          1490  3
;   764          1491  3          if cdu$check_for_children(.parent,node_k_cliroutine,node_k_image,node_k_routine) then
;   765          1492  3                  cdu$report_syntax_error(msg(cdu$_confroutimg));
;   766          1493  3
;   767          1494  3          ! Next we have a symbol which is the name of the user routine which
;   768          1495  3          ! can process this command.  Create a node containing the symbol.
;   769          1496  3
;   770          1497  3          cdu$get_next_token();
;   771          1498  3          clause = cdu$create_node(node_k_routine,..cdu$gq_token[len],..cdu$gq_token[ptr]);
```

```
;  772          1499  3          cdu$token_must_be(tkn_k_symbol);
;  773          1500             return .clause;
;  774          1501  );
;  775          1502
;  776          1503  if token_is(tkn_k_symbol,'SYNONYM') then (
;  777          1504
;  778          1505             ! We have a SYNONYM clause.  It specifies a symbol which is a synonym
;  779          1506             ! for the verb name.  Create a node containing the symbol.
;  780          1507
;  781          1508             cdu$get_next_token();
;  782          1509             clause = cdu$create_node(node_k_synonym,..cdu$gq_token[len],..cdu$gq_token[ptr]);
;  783          1510             cdu$token_must_be(tkn_k_symbol);
;  784          1511             return .clause;
;  785          1512  );
;  786          1513
;  787          1514  ! We don't have a clause that we understand, so there probably aren't any more.
;  788          1515
;  789          1516  return 0;
;  790          1517
;  791          1518  1 END;
; INFO#250                L1:1254
; Referenced LOCAL symbol LAST_ITEM is probably not initialized


                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                                53  47  41  4C  46  49  4C  43  00020 P.AAG:  .ASCII  \CLIFLAGS\                          ;
                            45  4E  49  54  55  4F  52  49  4C  43  00028 P.AAH:  .ASCII  \CLIROUTINE\                       ;
                                57  4F  4C  4C  41  53  49  44  00032 P.AAI:  .ASCII  \DISALLOW\                          ;
                        53  57  4F  4C  4C  41  53  49  44  4F  4E  0003A P.AAJ:  .ASCII  \NODISALLOWS\                     ;
                                            45  47  41  4D  49  00045 P.AAK:  .ASCII  \IMAGE\                           ;
                                        53  54  55  50  54  55  4F  0004A P.AAL:  .ASCII  \OUTPUTS\                         ;
                                    52  45  54  45  4D  41  52  41  50  00051 P.AAM:  .ASCII  \PARAMETER\                   ;
                            53  52  45  54  45  4D  41  52  41  50  4F  4E  0005A P.AAN:  .ASCII  \NOPARAMETERS\           ;
                                            58  49  46  45  52  50  00066 P.AAO:  .ASCII  \PREFIX\                        ;
                                    52  45  49  46  49  4C  41  55  51  0006C P.AAP:  .ASCII  \QUALIFIER\                 ;
                            53  52  45  49  46  49  4C  41  55  51  4F  4E  00075 P.AAQ:  .ASCII  \NOQUALIFIERS\          ;
                                            45  4E  49  54  55  4F  52  00081 P.AAR:  .ASCII  \ROUTINE\                   ;
                                            4D  59  4E  4F  4E  59  53  00088 P.AAS:  .ASCII  \SYNONYM\                   ;

                                                                .EXTRN  CDU$_CONFROUTIMG
                                                                .EXTRN  CDU$_CONFNODIS, CDU$_CONFDIS
                                                                .EXTRN  CDU$_IMAGELEN, CDU$_CONFOUTPUTS
                                                                .EXTRN  CDU$_CONFNOPARM
                                                                .EXTRN  CDU$_INVPARM, CDU$_CONFPARM
                                                                .EXTRN  CDU$_DUPPREFIX, CDU$_CONFNOQUAL
                                                                .EXTRN  CDU$_CONFQUAL

                                                                .PSECT  $CODE$,NOWRT,2

                                                    0FFC 00000  .ENTRY  CDU$V_S_CLAUSE, Save R2,R3,R4,R5,R6,R7,R8,- ;  1227
                                                                        R9,R10,R11
                                5B 00000000G   00   9E 00002    MOVAB   CDU$CHECK_FOR_CHILDREN, R11                     ;
                                5A 00000000G   00   9E 00009    MOVAB   CDU$REPORT_SYNTAX_ERROR, R10                    ;
                                59 00000000G   00   9E 00010    MOVAB   CDU$GL_TOKEN_CLASS, R9                          ;
                                58 00000000G   00   9E 00017    MOVAB   CDU$GET_NEXT_TOKEN, R8                          ;
```

```
                                57 00000000G   00  9E 0001E          MOVAB   CDU$GQ_TOKEN, R7
                                0D             69  D1 00025          CMPL    CDU$GL_TOKEN_CLASS, #13                         ; 1238
                                               51  12 00028          BNEQ    5$
                                50       04    A7  D0 0002A          MOVL    CDU$GQ_TOKEN+4, R0
        08              00      60             67  2D 0002E          CMPC5   CDU$GQ_TOKEN, (R0), #0, #8, P.AAG
                                         0000' CF      00033
                                               43  12 00036          BNEQ    5$
                                               07  DD 00038          PUSHL   #7                                              ; 1242
                    00000000G   00             01  FB 0003A          CALLS   #1, CDU$CREATE_NODE
                                54             50  D0 00041          MOVL    R0, CLAUSE
                                68             00  FB 00044          CALLS   #0, CDU$GET_NEXT_TOKEN                          ; 1243
                                               07  DD 00047          PUSHL   #7                                              ; 1251
                    00000000G   00             01  FB 00049          CALLS   #1, CDU$TOKEN_MUST_BE
                                               54  DD 00050 1$:      PUSHL   CLAUSE                                          ; 1253
                    00000000G   00             01  FB 00052          CALLS   #1, CDU$CLI_FLAG
                                56             50  D0 00059          MOVL    R0, ITEM
                                         08    A4  D5 0005C          TSTL    8(CLAUSE)                                       ; 1254
                                               06  12 0005F          BNEQ    2$
                          08    A4             56  D0 00061          MOVL    ITEM, 8(CLAUSE)
                                               04  11 00065          BRB     3$
                          04    A5             56  D0 00067 2$:      MOVL    ITEM, 4(LAST_ITEM)
                                55             56  D0 0006B 3$:      MOVL    ITEM, LAST_ITEM
                                05             69  D1 0006E          CMPL    CDU$GL_TOKEN_CLASS, #5                          ; 1255
                                               03  13 00071          BEQL    4$
                                         0197  31  00073          BRW     22$
                                68             00  FB 00076 4$:      CALLS   #0, CDU$GET_NEXT_TOKEN                          ; 1256
                                               D5  11 00079          BRB     1$                                              ; 1251
                                0D             69  D1 0007B 5$:      CMPL    CDU$GL_TOKEN_CLASS, #13                         ; 1262
                                               34  12 0007E          BNEQ    7$
                                50       04    A7  D0 00080          MOVL    CDU$GQ_TOKEN+4, R0
        0A              00      60             67  2D 00084          CMPC5   CDU$GQ_TOKEN, (R0), #0, #10, P.AAH
                                         0000' CF      00089
                                               26  12 0008C          BNEQ    7$
                                               12  DD 0008E          PUSHL   #18                                             ; 1267
                                               0A  DD 00090          PUSHL   #10
                                               08  DD 00092          PUSHL   #8
                                         04    AC  DD 00094          PUSHL   PARENT
                                68             04  FB 00097          CALLS   #4, CDU$CHECK_FOR_CHILDREN
                                09             50  E9 0009A          BLBC    R0, 6$
                                00000000G      8F  DD 0009D          PUSHL   #CDU$_CONFROUTIMG                               ; 1268
                                6A             01  FB 000A3          CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                                68             00  FB 000A6 6$:      CALLS   #0, CDU$GET_NEXT_TOKEN                          ; 1274
                                         04    A7  DD 000A9          PUSHL   CDU$GQ_TOKEN+4                                  ; 1275
                                7E             67  3C 000AC          MOVZWL  CDU$GQ_TOKEN, -(SP)
                                               08  DD 000AF          PUSHL   #8
                                         0357  31  000B1          BRW     52$
                                0D             69  D1 000B4 7$:      CMPL    CDU$GL_TOKEN_CLASS, #13                         ; 1280
                                               3F  12 000B7          BNEQ    9$
                                50       04    A7  D0 000B9          MOVL    CDU$GQ_TOKEN+4, R0
        08              00      60             67  2D 000BD          CMPC5   CDU$GQ_TOKEN, (R0), #0, #8, P.AAI
                                         0000' CF      000C2
                                               31  12 000C5          BNEQ    9$
                                               2A  DD 000C7          PUSHL   #42                                             ; 1285
                                         04    AC  DD 000C9          PUSHL   PARENT
                                68             02  FB 000CC          CALLS   #2, CDU$CHECK_FOR_CHILDREN
                                09             50  E9 000CF          BLBC    R0, 8$
                                00000000G      8F  DD 000D2          PUSHL   #CDU$_CONFNODIS                                 ; 1286
```

```
                        6A              01 FB 000D8          CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                                        09 DD 000DB 8$:      PUSHL   #9                                      ;  1290
                00000000G   00          01 FB 000DD          CALLS   #1, CDU$CREATE_NODE
                            54          50 D0 000E4          MOVL    R0, CLAUSE
                            68          00 FB 000E7          CALLS   #0, CDU$GET_NEXT_TOKEN                  ;  1291
                00000000G   00          00 FB 000EA          CALLS   #0, CDU$BOOL_EXPR                       ;  1295
                        08  A4          50 D0 000F1          MOVL    R0, 8(CLAUSE)
                                  0326  31 000F5             BRW     54$                                     ;  1296
                            0D          69 D1 000F8 9$:      CMPL    CDU$GL_TOKEN_CLASS, #13                 ;  1299
                                        2A 12 000FB          BNEQ    11$
                            50      04  A7 D0 000FD          MOVL    CDU$GQ_TOKEN+4, R0
        0B          00      60          67 2D 00101          CMPC5   CDU$GQ_TOKEN, (R0), #0, #11, P.AAJ
                                0000'   CF    00106
                                        1C 12 00109          BNEQ    11$
                                        09 DD 0010B          PUSHL   #9                                      ;  1304
                                    04  AC DD 0010D          PUSHL   PARENT
                            6B          02 FB 00110          CALLS   #2, CDU$CHECK_FOR_CHILDREN
                            09          50 E9 00113          BLBC    R0, 10$
                    00000000G   8F      DD 00116             PUSHL   #CDU$_CONFDIS                           ;  1305
                            6A          01 FB 0011C          CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                            68          00 FB 0011F 10$:     CALLS   #0, CDU$GET_NEXT_TOKEN                  ;  1307
                                        2A DD 00122          PUSHL   #42                                     ;  1308
                                  0286  31 00124             BRW     48$
                            0D          69 D1 00127 11$:     CMPL    CDU$GL_TOKEN_CLASS, #13                 ;  1311
                                        6B 12 0012A          BNEQ    17$
                            50      04  A7 D0 0012C          MOVL    CDU$GQ_TOKEN+4, R0
        05          00      50          67 2D 00130          CMPC5   CDU$GQ_TOKEN, (R0), #0, #5, P.AAK
                                0000'   CF    00135
                                        5D 12 00138          BNEQ    17$
                                        12 DD 0013A          PUSHL   #18                                     ;  1316
                                        0A DD 0013C          PUSHL   #10
                                        08 DD 0013E          PUSHL   #8
                                    04  AC DD 00140          PUSHL   PARENT
                            6B          04 FB 00143          CALLS   #4, CDU$CHECK_FOR_CHILDREN
                            09          50 E9 00146          BLBC    R0, 12$
                    00000000G   8F      DD 00149             PUSHL   #CDU$_CONFROUTIMG                       ;  1317
                            6A          01 FB 0014F          CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                                        0C DD 00152 12$:     PUSHL   #12                                     ;  1322
                            68          01 FB 00154          CALLS   #1, CDU$GET_NEXT_TOKEN
                            50          67 3C 00157 13$:     MOVZWL  CDU$GQ_TOKEN, R0                        ;  1326
                            50      04  A7 C0 0015A          ADDL2   CDU$GQ_TOKEN+4, R0
                            20      FF  A0 91 0015E          CMPB    -1(R0), #32
                                        06 13 00162          BEQL    14$
                            09      FF  A0 91 00164          CMPB    -1(R0), #9                              ;  1327
                                        04 12 00168          BNEQ    15$
                                        67 B7 0016A 14$:     DECW    CDU$GQ_TOKEN                            ;  1328
                                        E9 11 0016C          BRB     13$
                                    04  A7 DD 0016E 15$:     PUSHL   CDU$GQ_TOKEN+4                          ;  1329
                            7E          67 3C 00171          MOVZWL  CDU$GQ_TOKEN, -(SP)
                                        0A DD 00174          PUSHL   #10
                00000000G   00          03 FB 00176          CALLS   #3, CDU$CREATE_NODE
                            54          50 D0 0017D          MOVL    R0, CLAUSE
                            3F      10  A4 91 00180          CMPB    16(CLAUSE), #63                         ;  1333
                                        0D 1B 00184          BLEQU   16$
                                        3F DD 00186          PUSHL   #63                                     ;  1334
                                        01 DD 00188          PUSHL   #1
                        00000000G   8F      DD 0018A         PUSHL   #CDU$_IMAGELEN
```

```
                        6A              03  FB 00190                   CALLS   #3, CDU$REPORT_SYNTAX_ERROR
                                        0B  DD 00193 16$:               PUSHL   #11                                             ;  1336
                                        78  11 00195                   BRB     23$
                        0D              69  D1 00197 17$:               CMPL    CDU$GL_TOKEN_CLASS, #13                         ;  1340
                                        76  12 0019A                   BNEQ    24$
                        50      04      A7  D0 0019C                   MOVL    CDU$GQ_TOKEN+4, R0
07              00      60              67  2D 001A0                   CMPC5   CDU$GQ_TOKEN, (R0), #0, #7, P.AAL
                                0000'   CF      001A5
                                        68  12 001A8                   BNEQ    24$
                                        0B  DD 001AA                   PUSHL   #11                                             ;  1344
                                04      AC  DD 001AC                   PUSHL   PARENT
                        6B              02  FB 001AF                   CALLS   #2, CDU$CHECK_FOR_CHILDREN
                        09              50  E9 001B2                   BLBC    R0, 18$
                            00000000G   8F  DD 001B5                   PUSHL   #CDU$_CONFOUTPUTS                               ;  1345
                        6A              01  FB 001BB                   CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                                        0B  DD 001BE 18$:               PUSHL   #11                                             ;  1349
                00000000G       00      01  FB 001C0                   CALLS   #1, CDU$CREATE_NODE
                                54      50  D0 001C7                   MOVL    R0, CLAUSE
                                68      00  FB 001CA                   CALLS   #0, CDU$GET_NEXT_TOKEN                          ;  1350
                                        07  DD 001CD                   PUSHL   #7                                              ;  1358
                00000000G       00      01  FB 001CF                   CALLS   #1, CDU$TOKEN_MUST_BE
                                04      A7  DD 001D6 19$:               PUSHL   CDU$GQ_TOKEN+4                                  ;  1360
                                7E      67  3C 001D9                   MOVZWL  CDU$GQ_TOKEN, -(SP)
                                        0C  DD 001DC                   PUSHL   #12
                00000000G       00      03  FB 001DE                   CALLS   #3, CDU$CREATE_NODE
                                56      50  D0 001E5                   MOVL    R0, ITEM
                                        0D  DD 001E8                   PUSHL   #13                                             ;  1361
                00000000G       00      01  FB 001EA                   CALLS   #1, CDU$TOKEN_MUST_BE
                                08      A4  D5 001F1                   TSTL    8(CLAUSE)                                       ;  1362
                                        06  12 001F4                   BNEQ    20$
                        08      A4      56  D0 001F6                   MOVL    ITEM, 8(CLAUSE)
                                        04  11 001FA                   BRB     21$
                        04      A5      56  D0 001FC 20$:              MOVL    ITEM, 4(LAST_ITEM)
                                55      56  D0 00200 21$:              MOVL    ITEM, LAST_ITEM
                                05      69  D1 00203                   CMPL    CDU$GL_TOKEN_CLASS, #5                          ;  1363
                                        05  12 00206                   BNEQ    22$
                                68      00  FB 00208                   CALLS   #0, CDU$GET_NEXT_TOKEN                          ;  1364
                                        C9  11 0020B                   BRB     19$                                             ;  1358
                                        08  DD 0020D 22$:              PUSHL   #8                                              ;  1366
                                    0205    31 0020F 23$:              BRW     53$
                                0D      69  D1 00212 24$:              CMPL    CDU$GL_TOKEN_CLASS, #13                         ;  1370
                                        0C  12 00215                   BNEQ    25$
                                50      04  A7 D0 00217                MOVL    CDU$GQ_TOKEN+4, R0
09              00      60              67  2D 0021B                   CMPC5   CDU$GQ_TOKEN, (R0), #0, #9, P.AAM
                                0000'   CF      00220
                                        03  13 00223 25$:              BEQL    26$
                                    0083    31 00225                   BRW     35$
                                        0E  DD 00228 26$:              PUSHL   #14                                             ;  1375
                                04      AC  DD 0022A                   PUSHL   PARENT
                        6B              02  FB 0022D                   CALLS   #2, CDU$CHECK_FOR_CHILDREN
                        09              50  E9 00230                   BLBC    R0, 27$
                            00000000G   8F  DD 00233                   PUSHL   #CDU$_CONFNOPARM                                ;  1376
                        6A              01  FB 00239                   CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                        68              00  FB 0023C 27$:              CALLS   #0, CDU$GET_NEXT_TOKEN                          ;  1380
                                04      A7  DD 0023F                   PUSHL   CDU$GQ_TOKEN+4                                  ;  1381
                                7E      67  3C 00242                   MOVZWL  CDU$GQ_TOKEN, -(SP)
                                        0D  DD 00245                   PUSHL   #13
```

```
                00000000G  00          03  FB 00247          CALLS   #3, CDU$CREATE_NODE                              ;
                           54          50  D0 0024E          MOVL    R0, CLAUSE                                      ;
                           50     04   A7  D0 00251          MOVL    CDU$GQ_TOKEN+4, R0                              ; 1386
                           02          67  B1 00255          CMPW    CDU$GQ_TOKEN, #2                                ; 1388
                                       12  12 00258          BNEQ    28$                                             ;
                      50   8F          60  91 0025A          CMPB    (R0), #80                                       ; 1389
                                       0C  12 0025E          BNEQ    28$                                             ;
                           31     01   A0  91 00260          CMPB    1(R0), #49                                      ; 1390
                                       06  1F 00264          BLSSU   28$                                             ;
                           38     01   A0  91 00266          CMPB    1(R0), #56                                      ;
                                       09  1B 0026A          BLEQU   29$                                             ;
                      00000000G  8F        DD 0026C  28$:     PUSHL   #CDU$_INVPARM                                   ; 1391
                           6A          01  FB 00272          CALLS   #1, CDU$REPORT_SYNTAX_ERROR                     ;
                                       0D  DD 00275  29$:     PUSHL   #13                                             ; 1393
                00000000G  00          01  FB 00277          CALLS   #1, CDU$TOKEN_MUST_BE                           ;
                           05          69  D1 0027E  30$:     CMPL    CDU$GL_TOKEN_CLASS, #5                          ; 1400
                                       03  12 00281          BNEQ    31$                                             ;
                           68          00  FB 00283          CALLS   #0, CDU$GET_NEXT_TOKEN                          ;
                                       54  DD 00286  31$:     PUSHL   CLAUSE                                          ; 1401
                00000000G  00          01  FB 00288          CALLS   #1, CDU$PARAM_CLAUSE                            ;
                           56          50  D0 0028F          MOVL    R0, ITEM                                        ;
                                       03  12 00292          BNEQ    32$                                             ; 1402
                                    0187   31  00294          BRW     54$                                             ;
                                08     A4  D5  00297  32$:     TSTL    8(CLAUSE)                                       ; 1403
                                       06  12 0029A          BNEQ    33$                                             ;
                           08     A4          56  D0 0029C          MOVL    ITEM, 8(CLAUSE)                         ;
                                       04  11 002A0          BRB     34$                                             ;
                           04     A5          56  D0 002A2  33$:     MOVL    ITEM, 4(LAST_ITEM)                      ;
                           55          56  D0 002A6  34$:     MOVL    ITEM, LAST_ITEM                                 ;
                                       D3  11 002A9          BRB     30$                                             ; 1393
                           0D          69  D1 002AB  35$:     CMPL    CDU$GL_TOKEN_CLASS, #13                         ; 1409
                                       2A  12 002AE          BNEQ    37$                                             ;
                           50     04   A7  D0 002B0          MOVL    CDU$GQ_TOKEN+4, R0                              ;
                0C         00          60  67 2D 002B4          CMPC5   CDU$GQ_TOKEN, (R0), #0, #12, P.AAN              ;
                                    0000'  CF  002B9                                                                  ;
                                       1C  12 002BC          BNEQ    37$                                             ;
                                       0D  DD 002BE          PUSHL   #13                                             ; 1414
                                04     AC  DD 002C0          PUSHL   PARENT                                          ;
                           6B          02  FB 002C3          CALLS   #2, CDU$CHECK_FOR_CHILDREN                      ;
                           09          50  E9 002C6          BLBC    R0, 36$                                         ;
                      00000000G  8F        DD 002C9          PUSHL   #CDU$_CONFPARM                                  ; 1415
                           6A          01  FB 002CF          CALLS   #1, CDU$REPORT_SYNTAX_ERROR                     ;
                           68          00  FB 002D2  36$:     CALLS   #0, CDU$GET_NEXT_TOKEN                          ; 1417
                                       0E  DD 002D5          PUSHL   #14                                             ; 1418
                                    00D3   31  002D7          BRW     48$                                             ;
                           0D          69  D1 002DA  37$:     CMPL    CDU$GL_TOKEN_CLASS, #13                         ; 1421
                                       30  12 002DD          BNEQ    39$                                             ;
                           50     04   A7  D0 002DF          MOVL    CDU$GQ_TOKEN+4, R0                              ;
                06         00          60  67 2D 002E3          CMPC5   CDU$GQ_TOKEN, (R0), #0, #6, P.AAO               ;
                                    0000'  CF  002E8                                                                  ;
                                       22  12 002EB          BNEQ    39$                                             ;
                                       0F  DD 002ED          PUSHL   #15                                             ; 1425
                                04     AC  DD 002EF          PUSHL   PARENT                                          ;
                           6B          02  FB 002F2          CALLS   #2, CDU$CHECK_FOR_CHILDREN                      ;
                           09          50  E9 002F5          BLBC    R0, 38$                                         ;
                      00000000G  8F        DD 002F8          PUSHL   #CDU$_DUPPREFIX                                 ; 1426
                           6A          01  FB 002FE          CALLS   #1, CDU$REPORT_SYNTAX_ERROR                     ;
```

```
                                68              00  FB 00301 38$:    CALLS   #0, CDU$GET_NEXT_TOKEN                    ; 1431
                                    04      A7  DD 00304             PUSHL   CDU$GQ_TOKEN+4                          ; 1432
                                7E              67  3C 00307             MOVZWL  CDU$GQ_TOKEN, -(SP)
                                                0F  DD 0030A             PUSHL   #15
                                            00FC    31 0030C             BRW     52$
                                0D                  69  D1 0030F 39$:    CMPL    CDU$GL_TOKEN_CLASS, #13             ; 1437
                                                    6D  12 00312             BNEQ    46$
                                50              04  A7  D0 00314             MOVL    CDU$GQ_TOKEN+4, R0
        09          00          60              67  2D 00318             CMPC5   CDU$GQ_TOKEN, (R0), #0, #9, P.AAP
                                        0000'       CF  0031D
                                                    5F  12 00320             BNEQ    46$
                                                    11  DD 00322             PUSHL   #17                             ; 1442
                                                04  AC  DD 00324             PUSHL   PARENT
                                68                  02  FB 00327             CALLS   #2, CDU$CHECK_FOR_CHILDREN
                                09                  50  E9 0032A             BLBC    R0, 40$
                                    00000000G       8F  DD 0032D             PUSHL   #CDU$_CONFNOQUAL                ; 1443
                                6A                  01  FB 00333             CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                                68                  00  FB 00336 40$:    CALLS   #0, CDU$GET_NEXT_TOKEN              ; 1447
                                    04      A7  DD 00339             PUSHL   CDU$GQ_TOKEN+4                          ; 1448
                                7E              67  3C 0033C             MOVZWL  CDU$GQ_TOKEN, -(SP)
                                                10  DD 0033F             PUSHL   #16
                        00000000G               00  FB 00341             CALLS   #3, CDU$CREATE_NODE
                                54              50  D0 00348             MOVL    R0, CLAUSE
                                                0D  DD 0034B             PUSHL   #13                             ; 1458
                        00000000G               00  FB 0034D             CALLS   #1, CDU$TOKEN_MUST_BE
                                                05  69  D1 00354 41$:    CMPL    CDU$GL_TOKEN_CLASS, #5              ; 1465
                                                    03  12 00357             BNEQ    42$
                                68                  00  FB 00359             CALLS   #0, CDU$GET_NEXT_TOKEN
                                                    54  DD 0035C 42$:    PUSHL   CLAUSE                          ; 1466
                        00000000G               00  FB 0035E             CALLS   #1, CDU$QUAL_CLAUSE
                                56              50  D0 00365             MOVL    R0, ITEM
                                                    03  12 00368             BNEQ    43$                             ; 1467
                                            00B1    31 0036A             BRW     54$
                                        08      A4  D5 0036D 43$:    TSTL    8(CLAUSE)                           ; 1468
                                                    06  12 00370             BNEQ    44$
                            08  A4                  56  D0 00372             MOVL    ITEM, 8(CLAUSE)
                                                    04  11 00376             BRB     45$
                            04  A5                  56  D0 00378 44$:    MOVL    ITEM, 4(LAST_ITEM)
                                55                  56  D0 0037C 45$:    MOVL    ITEM, LAST_ITEM
                                                    D3  11 0037F             BRB     41$                             ; 1458
                                0D                  69  D1 00381 46$:    CMPL    CDU$GL_TOKEN_CLASS, #13             ; 1474
                                                    2F  12 00384             BNEQ    49$
                                50              04  A7  D0 00386             MOVL    CDU$GQ_TOKEN+4, R0
        0C          00          60              67  2D 0038A             CMPC5   CDU$GQ_TOKEN, (R0), #0, #12, P.AAQ
                                        0000'       CF  0038F
                                                    21  12 00392             BNEQ    49$
                                                    10  DD 00394             PUSHL   #16                             ; 1479
                                                04  AC  DD 00396             PUSHL   PARENT
                                68                  02  FB 00399             CALLS   #2, CDU$CHECK_FOR_CHILDREN
                                09                  50  E9 0039C             BLBC    R0, 47$
                                    00000000G       8F  DD 0039F             PUSHL   #CDU$_CONFQUAL                  ; 1480
                                6A                  01  FB 003A5             CALLS   #1, CDU$REPORT_SYNTAX_ERROR
                                68                  00  FB 003A8 47$:    CALLS   #0, CDU$GET_NEXT_TOKEN              ; 1482
                                                    11  DD 003AB             PUSHL   #17                             ; 1483
                        00000000G               00  FB 003AD 48$:    CALLS   #1, CDU$CREATE_NODE
                                                    04  003B4             RET
                                0D                  69  D1 003B5 49$:    CMPL    CDU$GL_TOKEN_CLASS, #13             ; 1486
```

```
                                       33  12 003B8          BNEQ    51$                                                 ;
                              50   04  A7  D0 003BA          MOVL    CDU$GQ_TOKEN+4, R0                                  ;
       07          00         60       67  2D 003BE          CMPC5   CDU$GQ_TOKEN, (R0), #0, #7, P.AAR                   ;
                                 0000' CF     003C3                                                                      ;
                                       25  12 003C6          BNEQ    51$                                                 ;
                                       12  DD 003C8          PUSHL   #18                                                 ; 1491
                                       0A  DD 003CA          PUSHL   #10                                                 ;
                                       08  DD 003CC          PUSHL   #8                                                  ;
                                   04  AC  DD 003CE          PUSHL   PARENT                                              ;
                              6B       04  FB 003D1          CALLS   #4, CDU$CHECK_FOR_CHILDREN                          ;
                              09       50  E9 003D4          BLBC    R0, 50$                                             ;
                             00000000G 8F  DD 003D7          PUSHL   #CDU$_CONFROUTIMG                                   ; 1492
                              6A       01  FB 003DD          CALLS   #1, CDU$REPORT_SYNTAX_ERROR                         ;
                              68       00  FB 003E0  50$:    CALLS   #0, CDU$GET_NEXT_TOKEN                              ; 1497
                                   04  A7  DD 003E3          PUSHL   CDU$GQ_TOKEN+4                                      ; 1498
                              7E       67  3C 003E6          MOVZWL  CDU$GQ_TOKEN, -(SP)                                 ;
                                       12  DD 003E9          PUSHL   #18                                                 ;
                                       1E  11 003EB          BRB     52$                                                 ;
                              0D       69  D1 003ED  51$:    CMPL    CDU$GL_TOKEN_CLASS, #13                             ; 1503
                                       30  12 003F0          BNEQ    55$                                                 ;
                              50   04  A7  D0 003F2          MOVL    CDU$GQ_TOKEN+4, R0                                  ;
       07          00         60       67  2D 003F6          CMPC5   CDU$GQ_TOKEN, (R0), #0, #7, P.AAS                   ;
                                 0000' CF     003FB                                                                      ;
                                       22  12 003FE          BNEQ    55$                                                 ;
                              6B       00  FB 00400          CALLS   #0, CDU$GET_NEXT_TOKEN                              ; 1508
                                   04  A7  DD 00403          PUSHL   CDU$GQ_TOKEN+4                                      ; 1509
                              7E       67  3C 00406          MOVZWL  CDU$GQ_TOKEN, -(SP)                                 ;
                                       34  DD 00409          PUSHL   #52                                                 ;
                   00000000G  00       03  FB 0040B  52$:    CALLS   #3, CDU$CREATE_NODE                                 ;
                              54       50  D0 00412          MOVL    R0, CLAUSE                                          ;
                                       0D  DD 00415          PUSHL   #13                                                 ; 1510
                   00000000G  00       01  FB 00417  53$:    CALLS   #1, CDU$TOKEN_MUST_BE                               ;
                              50       54  D0 0041E  54$:    MOVL    CLAUSE, R0                                          ; 1511
                                       04     00421          RET                                                         ;
                              50       D4     00422  55$:    CLRL    R0                                                  ; 1516
                                       04     00424          RET                                                         ; 1518

; Routine Size:  1061 bytes,    Routine Base:  $CODE$ + 02DC


;  792          1519  1
;  793          1520  1 END
;  794          1521  0 ELUDOM



;                                   PSECT SUMMARY
;
;       Name                    Bytes                         Attributes
;
;   $GLOBAL$                        4  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   $CODE$                       1793  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;   $PLIT$                        143  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
```

```
;                              Library Statistics
;
;                                        --------- Symbols ---------      Pages       Processing
;       File                             Total    Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]LIB.L32;1          18619         4         0        1000        00:01.9


; Information:  5
; Warnings:     0
; Errors:       0


;                                       COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:PARSE1/OBJ=OBJ$:PARSE1 MSRC$:PARSE1/UPDATE=(ENH$:PARSE1)

; Size:         1793 code + 147 data bytes
; Run Time:       00:34.5
; Elapsed Time:   01:13.1
; Lines/CPU Min:   2642
; Lexemes/CPU-Min: 19323
; Memory Used:  345 pages
; Compilation Complete
```

SYMBOLS
LIS

NODES
LIS

OBJECT
LIS

PARSE1
LIS

PARSE3
LIS

ROUTINES
LIS

LISTING
LIS

MAIN
LIS

PARSE2
LIS

TABLE
LIS